

FIG. 1

X R -1/3/00 14:39:48 |3/00 14:24:42 1/3/00 14:13:36 1/3/00 14:15:09 1/3/00 14:11:34 1/3/00 14:16:31 TRANSMIT TRAFFIC IS NOT PROTECTED ON NE 294 OC3G1s. THE NEAR-END OPTICAL CARD DETECTED A PROBLEM ON ITS TRANSMITTED OPTICAL SIGNAL TIME 158 ALARMS DEGRAD' COST 4 က ഹ ഹ 4 156 10 14 14 24 ശ -154 23 22 1 ω 6 ω -152 VIOLAT' S δ B S  $\infty$ đ SONET: EXPERIENCING TRAFFIC LOSS, TRANSMIT NOT PROTECTED SONET: EXPERIENCING TRAFFIC LOSS, RECEIVE NOT PROTECTED 432-3653-821-ubal FR: SUBSYSTEM FAILURE, CONNECTIONS ARE DOWN SWITCHING: TRUNK CONNECTIONS ARE DOWN **NORTEL NETWORKS - PROBLEM MANAGER** SONET: REMOTE LINE HAS FAILED ATM: LOGICAL PATH SIGNAL LOST CAUSE AND CORRECTION: DOCUMENT REFERENCE: **PROBLEM LIST** PROBLEM 150 2

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FIG.2A

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		IMPACT											PENALTY	\$25/sec	\$80/sec	\$50/sec	\$50/sec			TRACT		
	>	PENALTY/IMPACT	\$300/s	\$500/s	\$80/s	\$25/s	\$500/s	\$750/s	\$150/s	\$50/s	\$500/s		AGREED	> 95.0%	< 150msec	99.7%	< 0.8%			VIEW CONTRACT		
		AGREED	> 98.5%	< 5 DAYS	< 150 msec	> 95%	> 99.5%	> 99.9%	> 0.7%	< 1%	> 5 DAYS		METRIC	PORT AVAIL.:	LATENCY:		DISCARDS:	[	I	224		
		DELIVERED AGREED	95.2%	2 DAYS	168 msec	93%	96.3%	88%	1.75%		2 DAYS		ME	PORT	Γ	PACKE <sup>-</sup>	DISIO		442.7276 367.8044	236-6745 commany com	ino: lunduino	2B
	PERFORMANCE DEGRADATIONS	METRIC	SERVICE AVAIL.		LATENCY	DIAL PORT AVAIL	SERVICE AVAIL.	NETWORK AVAIL	PACKET LOSS	PACKET LOSS	MTBF	:35:22	PENALTY	S \$200/hr	\$ \$500/sec	\$750/sec	\$500/sec		PHONE: (613) - 442-7276 CELL- (613) - 367.8000	FAX: (613) - 236-6745 P-mail: mhender@comnany rom		FIG. 2B
	RMANCE DE		SILVER S	GOLD N	60LD 1	BRONZE D	GOLD+ S	GOLD+ N	GOLD+ P	GOLD P	COLD N	02/02/00 14	AGREED	< 5 HOURS	> 3 DAYS	99.7%	99.5%	DER	NAME T ST	CANADA		
V	۲ 218 ALARMS   PERFOI	CUST. SERVICE  LEVEL	FRAME RELAY	VPN	MEGAROUTE	Ь	AMPS TRUNK	AMPS TRUNK	<b>FRAME RELAY</b>	<b>FRAME RELAY</b>	IP VPN	LAST REFRESH:	METRIC	(MTTR):	(MTBF):	Network avail.:	SERVICE AVAIL.:	Ĺ	COMPANY	0TTAWA, CANADA K1K 2K2		
	DETAILS 216 SERVICE VIDLATIONS <u>A</u>	CUSTOMER	ACURA CANADA F	AIR CANADA	DTORS	JOE'S GARAGE	LUT'N	MICROCELL SOLUT'N	NATIONAL POST	SEARS CANADA F	SYMPATICO	9 SLA(s) TOTAL AT LAST REFRESH: 02/02/00 14:35:22				NET	SI	CONTACT INFORMATION:				
		210		)		-							222		)						] 	

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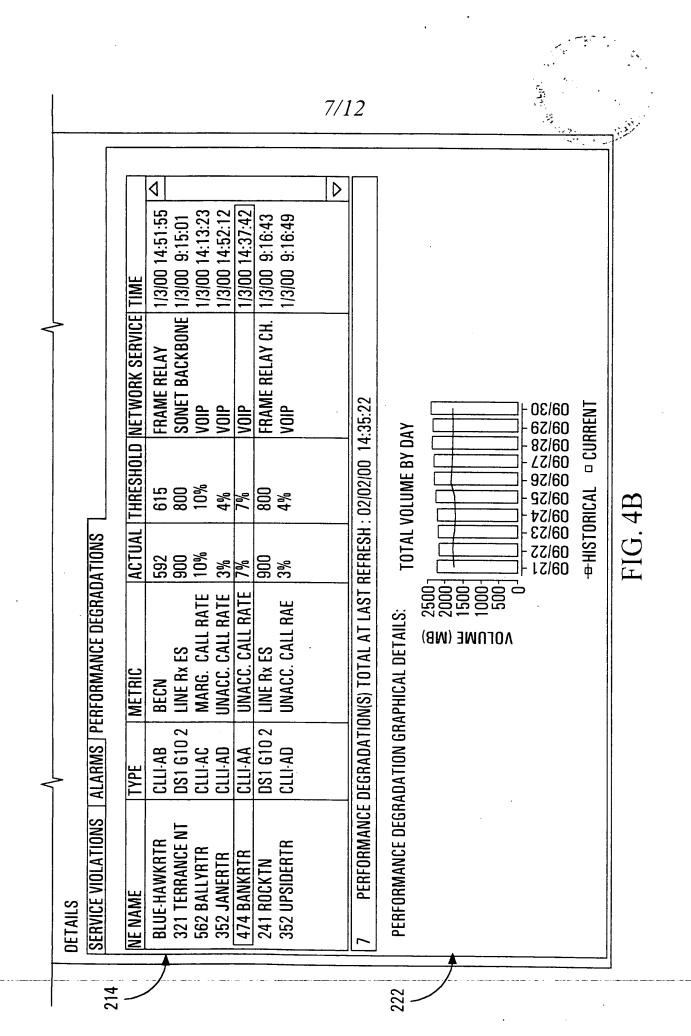
PROBLEM LIST	Ĺ	-152 /154	156		-158	
151/ PROBLEM	VIOLAT'	1 1	ALARMS DEGRAD' COST	COST	TIME	
SONET: EXPERIENCING TRAFFIC LOSS, RECEIVE NOT PROTECTED	0 g	8	10	4	1/3/00 14:39:48	
<b>CONET: EXPERIENCING TRAFFIC LOSS, TRANSMIT NOT PROTECTED</b>	TED 9	6	7	2	1/3/00 14:24:42	
FR: SUBSYSTEM FAILURE, CONNECTIONS ARE DOWN	6	23	14	e	1/3/00 14:16:31	
ATM: LOGICAL PATH SIGNAL LOST	8	22	14	Ъ	1/3/00 14:13:36	
SONET: REMOTE LINE HAS FAILED	4	8	9	2	1/3/00 14:11:34	
SWITCHING: TRUNK CONNECTIONS ARE DOWN	6	11	24	4	1/3/00 14:15:09	
						4/12
CAUSE AND CORRECTION: DETECTED A PROBLEM ON ITS TRANSMITTED OPTICAL SIGNAL	ROTECTED ( S TRANSMI1	IN NE 294 O	C3G1s. THE AL SIGNAL	NEAR-E	ND OPTICAL CARD	
DOCUMENT REFERENCE: 432-3653-821-ubal						
V			<		- - - -	·
	FIG. 3A	A				بر ا

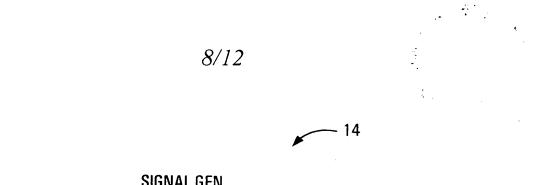
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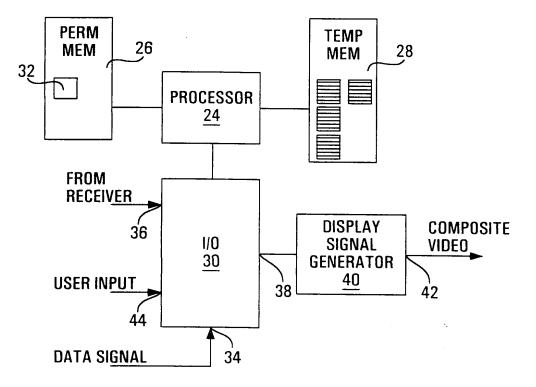
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5/12 LOSS OF FRAME. LOSS OF 4 **REFRESH NOW** D **BEEN DETECTED. CHECK CELL DELINIATION HAS** THE CABLING AND CONFIGURATION /3/00 14:50:13 /3/00 14:50:29 /3/00 14:50:04 |3/00 14:52:24 |3/00 14:52:24 |3|00 14:52:43 1/3/00 14:52:32 /3/00 14:50:04 /3/00 14:50:07 TIME REASON: MAJOR SA WARNING NSA **CRITICAL SA CRITICAL SA CRITICAL SA CRITICAL SA** MINOR NSA **MAJOR SA MAJOR SA** SEVERITY BMERHFBB:0.0 BMERHFBB TIME: 1/3/00 8:43 ACKNOWLEDGED BY: LIQIANG FIG. 3B COMMSUBSYSTEM LCD COMMSUBSYSTEM **DEGRADED SIGNAI OPERATION COND OPERATION COND JALARMS** | PERFORMANCE DEGRADATIONS ALARM(S) T0TAL AT LAST REFRESH: 02/02/00 14:35:22 DISPLAY: HOSTNAME: REASON **Rx AIS Rx AIS** LCD COMMUNI... COMMUNI... **VEAR PATH OPERATOR OPERATOR COMMUNI**. 0C3 G4 CELL CELL COMPONENT: Lp/2 SONET/O PATH/O ALARM TYPE: COMMUNICATIONS ΓYPE COM COM COM COM COM COM FAC COM ALARM: CRITICAL SERVICE VIOLATIONS 1011 CleoATM01 1011 CleoATM01 1011 CleoATM01 514 CleoATM01 1008 BoATM01 008 BoATM01 1008 BoATM01 008 BoATM01 1008 BoATMO NE NAME DETAILS တ 212 222

6/12 XE /3/00 14:24:42 TRANSMIT TRAFFIC IS NOT PROTECTED ON NE 294 OC3G1s. THE NEAR-END OPTICAL CARD DETECTED A PROBLEM ON ITS TRANSMITTED OPTICAL SIGNAL 1/3/00 14:39:48 1/3/00 14:13:36 1/3/00 14:11:34 1/3/00 14:15:09 1/3/00 14:16:31 TIME ~158 ALARMS DEGRAD' COST 4 വ က ഹ ഹ 4 ~156 10 14 14 24 ശ -154 22 23 Ξ ω တ ω 152 VIOLAT' FIG. 4A σ ъ b ω 4 S SONET: EXPERIENCING TRAFFIC LOSS, TRANSMIT NOT PROTECTED SONET: EXPERIENCING TRAFFIC LOSS, RECEIVE NOT PROTECTED 432-3653-821-ubal FR: SUBSYSTEM FAILURE, CONNECTIONS ARE DOWN SWITCHING: TRUNK CONNECTIONS ARE DOWN **NORTEL NETWORKS - PROBLEM MANAGER SONET: REMOTE LINE HAS FAILED** ATM: LOGICAL PATH SIGNAL LOST CAUSE AND CORRECTION: DOCUMENT REFERENCE: **PROBLEM LIST** PROBLEM 150-



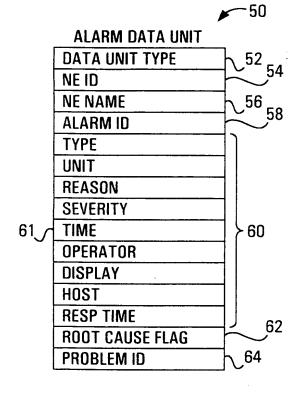




SIGNAL GEN.

FIG. 5

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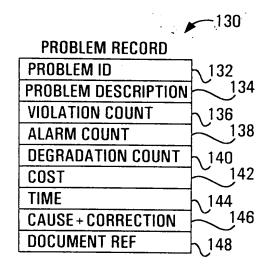


FIG. 9

FIG. 6

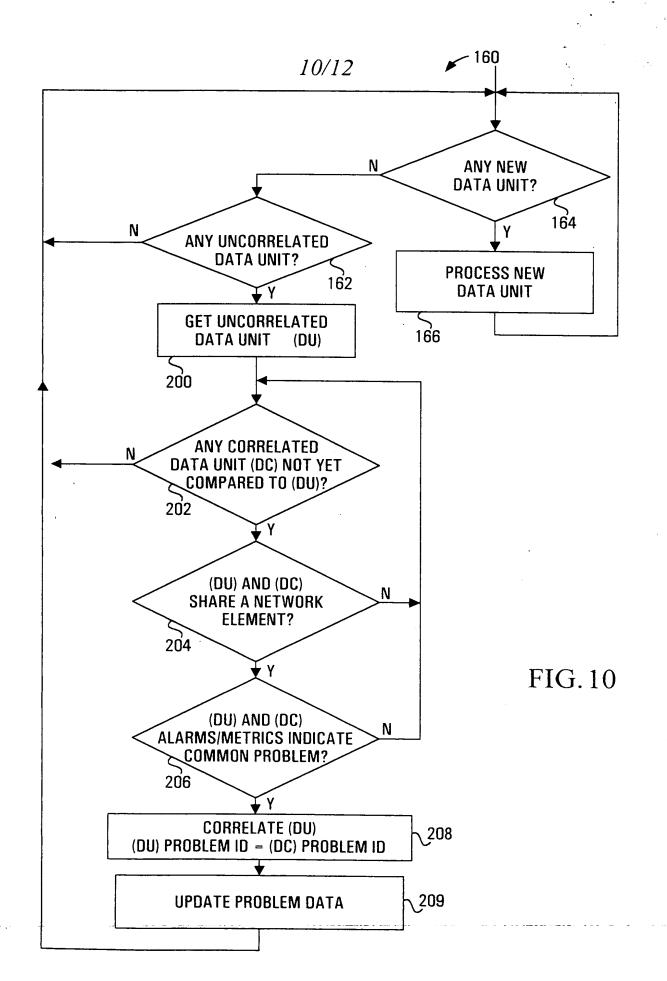
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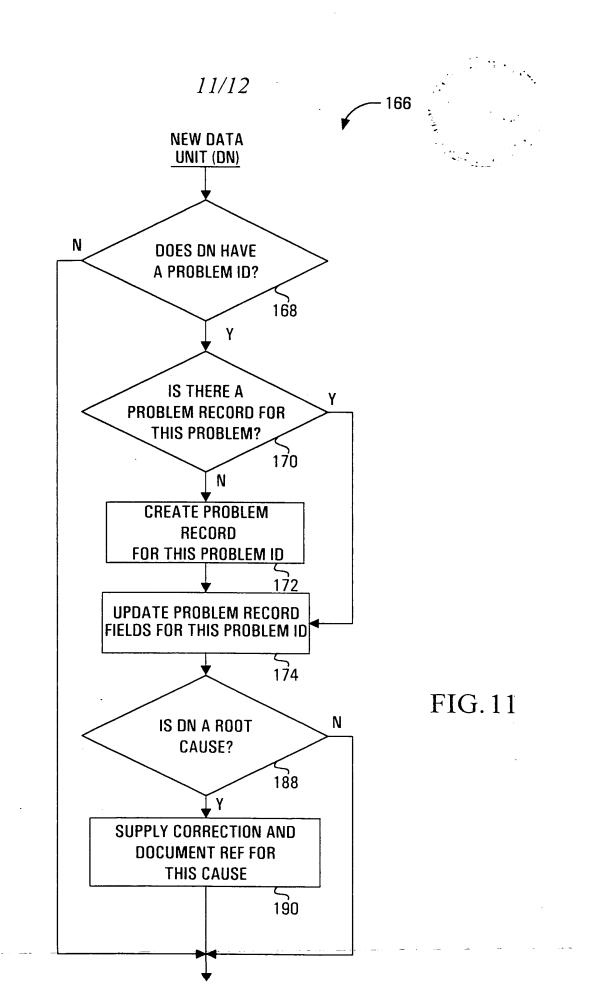
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SEF	RVICE VIOLATION DATA U	NIT	Г	
	DATA UNIT TYPE	hi	102	_
	CUSTOMER	$\vdash$	$\bigcirc 10$	4
	CUST SERVICE	h	106	_
	LEVEL	$\vdash$	$\bigcirc 10$	8
ļ	METRIC	h	110	_
	DELIVERED	$\vdash$	$\bigcirc$ <sup>11</sup>	2
	AGREED	h	114	_
	PENALTY/IMPACT	$\vdash$	$\bigcirc 11$	6
	CONTRACT ID	h	118	~
	TIME	$\vdash$	$\underline{)1}$	9
	NE ID	$\prod$		
	· · · · · · · · · · · · · · · · · · ·		-120	
	NE ID	$\bigcup$	122	2
	PROBLEM ID	$\sim$	$\sim$	-

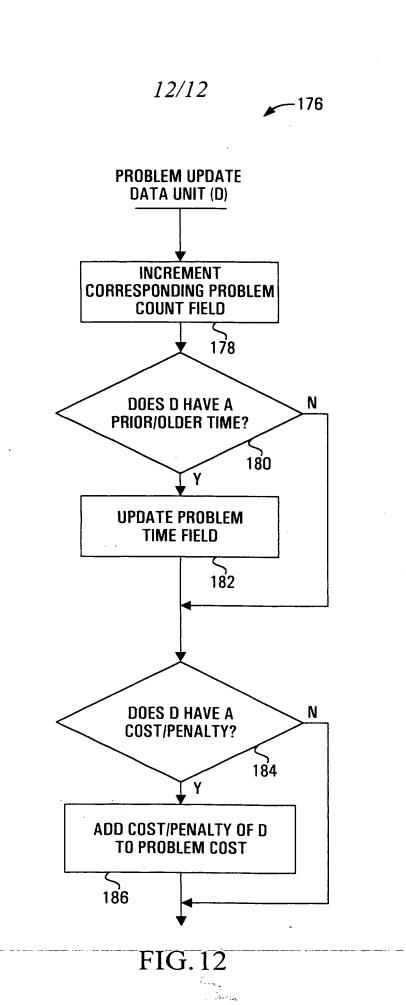
- 70 PERFORMANCE DEGRADATION DATA UNIT DATA UNIT TYPE 72 74 **NE NAME** NE ID 76 78 UNIT **METRIC** 80ر 82 ACTUAL THRESHOLD ×<sup>84</sup> ,86 **NETWORK SERVICE** TIME 88\_ 90 **PROBLEM ID** 

FIG. 7

FIG. 8







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